

Science and the Arts¹

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When, some time last year, I accepted the invitation to talk to you this evening, April 24th seemed a comfortable time away, and I had the vague feeling that it would be easy enough to find something to say about science and the arts. In fact, when I sat down to write, the enormity of what I'd let myself in for came rushing down on me: the difficulty is not knowing where to start, but when to stop. Undoubtedly there exists an important relationship between the two main areas of human intellectual activity, and a vitally important one, too, but one which, in the last century or so, has been characterised by misunderstanding and mistrust on both sides, and I don't mean simply in that traditional area where we compete for public funds. My credentials for talking about the subject, I had better make clear at once, are slender. Some maths, physics, chemistry, geology a great many years ago, a period as a farmer, and then a return to university to read the subject that I now profess. But by the nature of my office, since professors these days have to be administrators, negotiators, statisticians, and financial wizards, I've had a great deal to do with scientists over the last fifteen years. At the risk of sounding flippant, some of my best friends have been scientists, and I hope to retain the friendship of one or two even if they hear of tonight's talk.

First of all, I perhaps should say that I interpret the arts in my subject as not just the creative arts, but as the whole area of human knowledge, the study of men and the works of their imagination and intelligence, taken in by the traditional Arts Faculty. But I shall talk about the creative arts first: it is surprising but true to say that the tremendous development in scientific technology has made surprisingly little difference to the creative arts. Certainly, some sculptors now work with welded metal, or epoxy resins, some painters with acrylic paints, some make patterns of light with laser beams, some musicians use strange new electronic equipment to make equally strange new sounds, but by and large the practitioners of the arts continue to use the traditional methods. Sculptors still work with the chisel and mallet, painters with the brush, and even the most complex of new musical sounds must be translated into musical notation and written down,

laboriously, by the composer. I don't propose to talk about computer-generated poems by the way. I don't believe such things exist. If we turn to science as a subject, or as an inspiration for great works of art in our own time, there is the same surprising lack of impact. The last great advances, or so they seemed then, in scientific thought, that made a decided impact on the artistic imagination were, I think, Darwin's theory of evolution, and Freud's psychological explanations of human behaviour. Confronted with $e = mc^2$, we all seem struck dumb, and Wordsworth's prediction of 1801 has not come to pass. (I'm quoting from the Preface to the second edition of the *Lyrical Ballads*, and you might remember that Wordsworth was a very talented mathematician, and that Newton was one of his great heroes.)

"Poetry is the first and last of all knowledge—it is as immortal as the heart of man. If the labours of Men of science should ever create any material revolution, direct or indirect, in our condition, and in the impressions we habitually receive the Poet will sleep then no more than at present; he will be ready to follow the steps of the Man of science, not only in these general indirect effects, but he will be at his side, carrying sensation into the midst of the objects of science itself. The remotest discoveries of the Chemist, the Botanist, or the Mineralogist, will be as proper objects of the Poet's art as any on which it can be employed, if the time should ever come when these things shall be familiar to us, and the relations under which they are contemplated by the followers of these respective sciences shall be manifestly and palpably material to us as enjoying and suffering beings. If the time should ever come when what is now called science, thus familiarised to men, shall be ready to put on, as it were, a form of flesh and blood, the Poet will lend his divine spirit to aid the transfiguration."

This hasn't happened, except perhaps with the ideas of Sigmund Freud, which were partly derived from art anyway. Yet in the Renaissance, that great scientific leap forward, the human imagination was fired by the ideas of discovery, and scientific images crop up everywhere, in religious poems, pastoral poems, political poems, even love poems, notably those of John Donne. Why hasn't it happened again, in spite of staggering discoveries about genetic structure, atomic energy, astonishing technical achievements, like putting men on the moon and bringing them back safely? Apart from some science fiction, much of which is really cowboys and indians in funny clothes, some programme music, there isn't much to show.

Well, if we are to believe C. P. Snow, now Lord Snow, this is because of an ever-widening split between the scientists and the rest of us, which he described in a lecture called "The Two

¹ Read at an evening meeting held at the University of Western Australia on 24 April 1978 as part of a symposium entitled "What is Science?" organised by the Royal Society and the University of Western Australia Extension Service.

Cultures". Roughly summarized, Snow's argument was that all over the West there was a regrettable lack of understanding of how scientists thought and acted, of what science really was, and that many of the people who were socially and politically important, people he thought of as fairly represented by the term literary intelligentsia, could not or would not make the effort to understand what scientists were on about. Scientists, in his opinion, tended to be more literate than non-scientists were numerate. Non-scientists (there isn't a convenient non-negative word; artists won't do, and artsmen sounds as if it has been coined by Stephen Potter) were not capable of understanding, or not inclined to try to understand even the simplest of scientific concepts. Lord Snow, who had been a scientist, and was at the time of the lecture a successful novelist, produced his thesis with an irritating air of authority, and soon found himself being quite roughly handled in the correspondence columns, earning in particular a sharp and rather unfair rebuke from the great but cantankerous English critic the late Dr F. R. Leavis. The correspondence, for those who are interested, can be found in *The Spectator* of 9 March 1962, and following numbers. But by and large, there was some truth in what Snow said, and since then, the prevailing orthodoxy, especially among scientists, is that while scientists are literate *enough*, non-scientists don't understand or appreciate what scientists are doing for them, don't sympathise with their problems, and are little better than Luddites, machine-breakers. Too many scientists, to non-scientists, appear to be efficient barbarians, and too many non-scientists, to scientists, effete dilettenti. Let me at once admit faults, and honourable exceptions, on both sides, but then go on to say that the apportioning of blame for the split is by no means as simple as Snow's thesis would have us believe. Many scientists seem to have lost the knack of communicating the essence of what they are doing, to the people for whom it is ostensibly being done. I don't underestimate the difficulty of that kind of communication, but I know it is possible. In my last university an historian, an art historian, a composer, a botanist, a zoologist and I lunched together every Tuesday. We were friends, and we *trained* each other to talk about our subjects to each other. Rather to our surprise we found that quite soon we could understand each other, provided that we all abandoned our professional jargon. And because the detail required to understand how things were done wasn't readily comprehensible to us, we found ourselves cast back much more on why questions. We were, in other words, not only talking about our interests, but trying to justify them, and it was very good for us. If one feels that nobody outside one's own group can understand what one is doing, then it is too easy to feel released from moral responsibility. And moral responsibility is most important to the sciences. I suppose it is no accident that the art in which most scientists are most interested is music. It is hard to find a moral content in music.

Not by any means always, but in my opinion, too often, scientists have retreated into their mystery, and shut the doors behind them, muttering something about objectivity and measurable fact over their shoulders as they go. But there is sometimes the impression given that they alone deal with truth, and what the rest of us, in our subjective opinionated way, do with that truth when it is handed down to us, is none of their business. This is dangerous in two ways. Firstly, because any habitual assumption of superiority is corrupting to the holder, and secondly because if the authority is august enough, the rest of us are too easily overawed, and sometimes don't have the temerity to enter a debate where we might have useful contributions to make—whether the Third World really needs nuclear technology, for example, is something that shouldn't be decided only by nuclear physicists or nuclear engineers—or if we do enter, feel we should try to meet them on their own ground. We decide that we should import "scientific method", however we understand or misunderstand that phrase, into our own studies, and we generally come a cropper. "What can't be measured isn't serious" is a particularly insidious myth. *King Lear* is one of the most serious things I know, yet any attempt to quantify its qualities provides a very silly answer. We are all constantly concerned, in our daily lives, in our professions, with acts of individual critical judgment. To suggest that such questions are unserious, or improper, is absurd, just as it is absurd to suggest that any one discipline has a monopoly on truth, or the way to discover it.

There are many kinds of knowledge. Much is to be found in the great works of the artistic imagination, what W. B. Yeats called "monuments of unageing intellect", which only truly exist at the level of individual human response. Once one has responded to Lear's suffering, and seen him as at once an individual and as a representative of suffering humanity, one will never again be able to brush aside considerations of human suffering quite so easily. And that, too, is valuable truth.

To understand more about ourselves, the world in which we live, is an admirable aim. What we do with the increased knowledge depends on the nature of our understanding, and on our understanding of consequences. If our literary humanist culture is a jealously guarded privilege, inward-looking, and soothing in its effects, distracting us from great problems of human suffering like sickness and poverty and aggression, then we need to be shocked out of it. If scientists can through their search for knowledge help to solve these problems, then they help the human spirit to flourish. But they need the humanists, too, to make them aware of the consequences of their actions, to point out that in a potentially savage world, no discovery, in the use to which it can be put, is morally neutral. Understanding, mutual understanding, is what the world most needs, and the arts and the sciences may as well make a start by trying to understand each other.